

# Exhibit G



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

## AFFIDAVIT

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Commissioner:

I, John Giorgis, Jr., herewith affirm as follows.

(A) I was born on May 15, 1925; and I am a U.S. Citizen.

(B) I presently live at 1047 Piermont Road, South Euclid, Ohio 44121.

(C) In 1950 I received a B.E.E. Degree in Electrical Engineering from Catholic University of America, Washington, D.C.;

In 1956 I received an MSE Degree in Electrical Engineering from Union College and University, Schenectady, N.Y.; and

In 1962 I received my Professional Engineering License from the State of New York.

(D) I have practiced Electrical and Electronics Engineering since 1950, as follows.

1. Between September 1950 and September 1951 I was on the General Electric Company (G.E.) engineering training program with assignments in magnetic amplifiers, jet engine instrumentation, and power transformers.

2. Between September 1951 and October 1959 I was with G.E.'s Aeronautical and Ordnance Systems Division where I was responsible for the hardware design of the magnetic amplifier reactor control system of the atomic submarine Sea Wolf. I also did transistor control and circuit design for military systems.

3. Between October 1959 and February 1968 I was an Applications Engineer with G.E.'s Semiconductor Products Department, specializing in semiconductor applications for the military and industrial markets.

In addition, I designed a number of thick film and monolithic integrated circuits for these markets. I was co-author of the sixth and seventh editions of the G.E. Transistor Manual and of the Tunnel Diode Manual.

4. Between February 1968 and October 1976 I was a Consulting Engineer at G.E.'s Heavy Military Electronic Systems Department, where I was responsible for the Independent Research and Development Microelectronics Programs. These programs included thick film material and process studies, the design and application of custom thick film and monolithic integrated circuits.

5. Between October 1976 and April 1988 (when I retired) I was a Consulting Engineer and Technical Manager at G.E.'s Lighting Business Group in Cleveland, Ohio, designing and evaluating electronic high frequency ballasts for fluorescent and metal halide lamps.

I am the holder of three patents on inverter configurations for fluorescent lamps.

In addition, I performed research and development on the high frequency starting and running requirements of fluorescent lamps.

(E) In total, I have spent more than 10 years in the design, development, construction, testing and evaluation of electronic power supplies in general and electronic inverter-type power supplies in particular, and I have accumulated substantial experience in the art of power supplies, particularly electronic inverter-type power supplies and electronic inverter-type ballasts for fluorescent lamps.

Consequently, I believe I have at least ordinary skill in the art of electronic inverter-type power supplies, particularly as used in connection with lighting products and systems.

(F) I have read, and I am familiar with the teachings of, each one of the prior art references identified on page 3 hereof.

# Prior Art References

- \* U.S. Patent No. 2,587,169 to Kivari;
- \* U.S. Patent No. 2,923,856 to Greene et al.;
- \* U.S. Patent No. 2,965,856 to Roesel;
- \* U.S. Patent No. 3,368,164 to Shapiro;
- \* U.S. Patent No. 3,525,012 to Dimitracopoulos et al.;
- \* U.S. Patent No. 3,679,931 to Powell;
- \* U.S. Patent No. 3,681,654 to Quinn;
- \* U.S. Patent No. 3,710,177 to Ward;
- \* U.S. Patent No. 3,727,104 to Neal et al.;
- \* U.S. Patent No. 3,801,865 to Roberts;
- \* U.S. Patent No. 3,835,333 to Balan;
- \* U.S. Patent No. 3,868,561 to Matthes;
- \* U.S. Patent No. 3,939,362 to Grimes et al.;
- \* U.S. Patent No. 3,996,493 to Davenport et al.;
- \* U.S. Patent No. 4,008,414 to Agnew;
- \* U.S. Patent No. 4,057,750 to Elms et al.;
- \* U.S. Patent No. 4,104,715 to Lawson;
- \* U.S. Patent No. 4,151,445 to Davenport et al.;
- \* U.S. Patent No. 4,184,128 to Nilssen;
- \* U.S. Patent No. 4,207,497 to Capewell et al.;
- \* U.S. Patent No. 4,207,498 to Spira et al.;
- \* U.S. Patent No. 4,262,327 to Kovacik et al.;
- \* U.S. Patent No. 4,277,726 to Burke;
- \* U.S. Patent No. 4,293,799 to Roberts;
- \* U.S. Patent No. 4,295,079 to Otsuka et al.;
- \* U.S. Patent No. 4,300,073 to Skwirut et al.;
- \* U.S. Patent No. 4,307,353 to Nilssen;
- \* U.S. Patent No. 4,347,460 to Latassa et al.;
- \* U.S. Patent No. 4,354,120 to Schornack;
- \* U.S. Patent No. 4,367,434 to Miller;
- \* U.S. Patent No. 4,386,292 to Rothwell et al.;
- \* U.S. Patent No. 4,406,976 to Wisbey et al.;
- \* U.S. Patent No. 4,414,617 to Galindo;
- \* U.S. Patent No. 4,438,372 to Zuchtriegel;
- \* U.S. Patent No. 4,443,778 to Mewissen;
- \* U.S. Patent No. 4,463,277 to DeCaro;
- \* U.S. Patent No. 4,464,606 to Kane;
- \* U.S. Patent No. 4,499,403 to Leppelmeier et al.;
- \* U.S. Patent No. 4,503,363 to Nilssen;
- \* U.S. Patent No. 4,504,895 to Steigerwald;
- \* U.S. Patent No. 4,508,996 to Clegg et al.;
- \* U.S. Patent No. 4,731,551 to Gibbs et al.;
- \* Canadian Patent No. 633,937 to Waller et al.
- \* Japanese Patent No. 57-135689 to Matsushita;  
(Abstract Only)
- \* Pages 44-50, IEEE Spectrum, February, 1969: "Lethal electric currents" by Dalziel;
- \* Pages 130-133, PCI April 1983 PROCEEDINGS, by Baker;

(G) I have been informed to the effect that:

(1) the Commissioner rejected certain claims in an application for a patent for the reason that the Commissioner held the claimed invention to be obvious over prior art;

(2) as evidence of obviousness, the Commissioner cited the following prior art reference, a copy of which has been received by me:

U.S. Patent No. 2,587,169 to Kivari;

(3) the Commissioner held that the teachings in the cited Kivari patent, when modified and/or adapted on basis of well known prior art, rendered the claimed invention obvious;

(4) more particularly, the Commissioner held that by making -- on the basis of well known prior art -- an obvious and desirable modification and/or application of the teachings of Kivari, the claimed invention would result;

(5) in other words, the Commissioner held that, in view of well known prior art, the claimed invention merely constitutes an obvious modification and/or application of Kivari's teachings.

(H) I have not seen the application for patent identified in section (G) above, nor have I seen the claims thereof. More particularly, I have not received a description of the claimed invention.

(I) I have been requested:

(1) to carefully study and consider the cited reference in light of the situation described in section (G) above;

(2) to identify each and every instance of what I see -- in view of prior art known to me -- as a desirable obvious modification and/or application of Kivari's teachings;

(3) to express in writing each one of those desirable obvious modifications and/or applications.

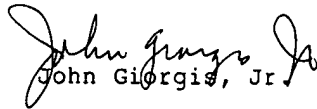
(J) I have performed the study and consideration requested of me in section (I) above, having spent therefor an amount of time that I judged to be reasonable; and I herewith set forth in writing each and every one of those desirable obvious modifications and/or applications, as follows:

(1) An obvious desirable modification of Kivari's lamp is to remove the transformer 19 from within the lamp. Place the transformer 19 outside the lamp with its own Edison base and socket. I believe that, given the dimensions of the neck of an incandescent lamp, the requirements of 110 Volt AC operation, and the efficient transfer of watts of power, a 60 Hz transformer can not be designed to fit into the neck of an incandescent lamp.

(2) The metal tungsten cylinder proposed by Kivari will have a very low resistance even when heated to incandescence. Thus, to dissipate a given wattage, the voltage will be low and the current high. If one uses the value of 1 Volt across the cylinder (column 2, lines 4 through 8), and 10 watts of power in the cylinder, the current is 10 Amperes. The cylinder resistance is 0.1 Ohm. In order to make the lamp efficient, the resistance of wires 17 and 18, the transformer secondary, and the connection joints must be much less than the cylinder resistance. This is very difficult to accomplish since wires 17 and 18 will be an alloy of metals in order to match the coefficient of expansion of the glass.

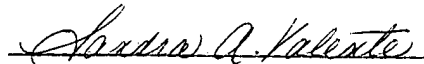
Instead of using a thin tungsten metal cylinder it may be possible to use a ceramic cylinder which has a sputtered thin film of tungsten. This should increase the resistance of the cylindrical filament significantly since the conduction cross section has been greatly reduced.

(3) Kivari claims that the lamp in his teaching is very rugged mechanically and will withstand severe shock and vibration forces. This may be true. However, he has ignored the effects which the coefficient of expansion of dissimilar metals have on the joints -- especially the ones which join wires 17 and 18 to the cylinder. These different coefficients of expansion could lead to work hardening, brittleness and eventual rupture as the lamp is cycled on and off.

  
John Giorgio, Jr.

STATE OF OHIO                    )  
                                          ) ss  
COUNTY OF CUYAHOGA )

Sworn to and subscribed before me this 25TH day of  
AUGUST, 1989.



Notary Public

SANDRA A. VALENTE, Notary Public  
State of Ohio and Cuyahoga County  
My Commission Expires May 18, 1992